skeptical of complaints about mergers and acquisitions lodged by horizontal competitors because an exercise of market power will generally lead to an increase in market price benefiting the competitor. However, an increase in efficiency will harm the competitor and lead to complaints that are not in the public interest.

Moreover, the proposed acquisition does not foreclose any partner or vertical supplier for Southern Linc. Southern Linc's customers do not roam onto the existing stand-alone Motorola dispatch systems today. Thus, the acquisition will not foreclose any Southern Linc roaming.

Leaving the Motorola spectrum to inefficient 900 MHz stand-alone analog systems scattered across the country will not provide much competition to Southern Linc. But using it to bolster Nextel's advanced service offerings will benefit consumers and harm competitors by forcing them to invest more in serving consumers.

B. Spectrum is a Key Resource for CMRS Competitors

Nextel has used its spectrum to establish a national footprint and become a major competitor in the CMRS market, where it offers an integrated package of mobile interconnect, dispatch, wireless Internet and other services. In the CMRS market, Nextel competes directly with the integrated service offerings of Sprint PCS, AT&T Wireless, Cingular Wireless, Verizon Wireless, VoiceStream and others. Nextel has been an innovative competitor in the CMRS market, offering enhanced dispatch capabilities, billing options (no roaming charges, per second billing), and new features (such as wireless Internet services) that have spurred competitive service offerings from other CMRS providers.

Spectrum is a critical resource for competition in the CMRS market. Nextel is limited in spectrum compared to its main rivals; it has on average about 20 MHz of non-contiguous spectrum in each geographic area, whereas its major competitors have significantly more spectrum.[7] Table 1 shows the total spectrum (in MHz) used by the largest CMRS providers for the major urban areas analyzed by Southern Linc.[8] The table considers 120 MHz of PCS spectrum, 50 MHz of cellular spectrum, 26.5 MHz of 800 MHz SMR spectrum (including 430 SMR and General Category channels and 100 business and industrial/land transportation pool channels), 5 MHz of 900 MHz SMR spectrum, 1.55 MHz of 220 MHz spectrum, and 6 MHz of 700 MHz Guard Band spectrum.

Nextel controls only a small fraction of the total CMRS spectrum, and has no more than the fifth most spectrum in any geographic area. For example, Verizon has 45 MHz in 5 of the nine major urban areas in Table 1. AT&T has 30 MHz or more in every one of the 9 areas. Nextel is not close in any market, with a maximum of 23.9 MHz non-contiguous spectrum. Nextel's acquisition of Motorola's 900 MHz licenses is an attempt by Nextel

[7] The lack of non-contiguous spectrum apparently makes some technologies such as wide-band CDMA unavailable.

[8] Affidavit of Michael G. Baumann and Stephen E. Siwek, February 8, 2001.

to achieve some of the same economies of operation as its competitors, and should lead to increased competition in the CMRS market.

The participation of Nextel's major competitors in the recent C & F block re-auction (auction no. 35) provides some market evidence that CMRS providers highly value additional spectrum. For example, three companies, Verizon, AT&T Wireless (through its affiliate Alaska Native Wireless), and Cingular (through its affiliate Salmon PCS) all were bidding for the three 10 MHz PCS licenses in New York. Verizon apparently wanted (and won) two of the 10 MHz blocks to complement its 25 MHz cellular license in the area. This gives Verizon a total of 45 MHz. At the same time, AT&T and Cingular each wanted a single 10 MHz license to complement the 10 MHz PCS license each already has in the area; in AT&T's case to add to the 25 MHz cellular license it holds in New York. As a result, the bidding for the New York licenses went over $2 billion for each of two 10 MHz licenses as each of the three bidders wanted a total of 20 MHz of PCS spectrum.[9]

C. Public Interest Benefits of Nextel's Prior Spectrum Acquisitions

Many of Southern Linc's arguments that the acquisition is contrary to the public interest have been raised in opposition to prior Nextel spectrum acquisitions. However, Nextel's use of spectrum from these acquisitions shows that it has significantly increased the efficient use of SMR spectrum and expanded output rather than restricted output, which would be a hallmark of anticompetitive behavior. Nextel has taken underutilized spectrum, invested significantly in technology, substantially increased the number of users supported on the spectrum, and given those users enhanced functionality.

Nextel's digital iDEN technology alone—without regard to the efficiencies gained through multiple-site channel re-use—increases spectrum use by a factor of six on Nextel's dispatch service and by a factor of three on its interconnected mobile telephone service. Nextel has also invested substantial money in converting its systems to a low-power cellular network architecture to increase capacity further.[10] This increase in efficiency has led to much greater use of the 800 MHz spectrum. Prior to the introduction of digital technology, the entire 800 MHz SMR industry had about two million users.[11] Today, Nextel alone has nearly seven million users[12] and there are almost 1.3 million additional SMR users on these bands outside of Nextel.[13]

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[9] The third 10 MHz license sold for "only" $1.5 billion because it was a protected license that only "small" businesses could bid upon. But bidders were rational in their substitution between licenses as "small" businesses received a 25% bidding credit for the non-protected licenses and the difference between the sales price of the protected license and non-protected licenses is explained by the bidding credit and bid increment.

[10] According to Nextel, it had 12,700 cell sites nationwide as of Dec. 31, 2000.

[11] See Implementation of Section 6002(g) of the Omnibus Budget Reconciliation Act of 1993, Annual Report and Analysis of Competitive Market Conditions With Respect to Communication Mobile Services, First Report 10 FCC Rcd 8844 (1995) at para. 35, citing "The State of the SMR and Digital Mobile Radio" (1994 and 1995) at p. 138, EMCI, Jan. 1995.

The number of subscribers utilizing a given band of spectrum is one measure of output. Output can also be measured by the average minutes of use by subscribers. The available evidence suggests that Nextel subscribers use more minutes and higher quality minutes than do stand-alone dispatch subscribers. Nextel customers average 480 minutes of use per month.[14] Approximately 53% of these minutes are used for interconnected mobile service, on which Nextel uses 3:1 compression, the remainder, 47%, are used for dispatch services where Nextel uses 6:1 compression. We can use this difference in compression to convert interconnected minutes of use into their equivalent in terms of dispatch-quality minutes. Because interconnected calls use twice the compression as dispatch, the effective number of dispatch quality minutes of use per average Nextel user is (.53x480x2) + (.47x480) = 734 minutes.

Strategis provides some information about the usage behavior for stand-alone dispatch users.[15] They claim that 60% of pure dispatch users make more than 100 calls per week. The typical duration of dispatch calls is very low, presumably much less than a minute, but for this purpose, if we assume that the typical length is one minute and the overall average is 100 minutes, the typical dispatch user would have about 433 dispatch minutes a month. This is less than the 480 minutes reported by Nextel and much less than the 734 quality-adjusted minutes calculated above.

Finally, it is important to consider whether consumers value the increased capacity and quality Nextel has made available for CMRS service. The evidence is that consumers are willing to pay for the increased quality by subscribing in substantially larger numbers. Gale and O'Brien develop a model to analyze the welfare effects of capacity reallocation.[16] They examine a situation where a firm acquires "dual-use" capacity – capacity that can be used to provide either of two services. Their model assumes that the acquiring firm has the ability to raise prices in one market by redirecting capacity to another market. Even under these assumptions (that do not hold here), they find welfare benefits from the shift of capacity to a higher value service. Shifting capacity to a higher value use is exactly what Nextel proposes to do in the current acquisition.

IV. Competitive Effects in the CMRS Market

Southern Linc bases its arguments against the proposed acquisition on a narrowly defined trunked dispatch market. However, a wide variety of evidence demonstrates that dispatch

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[12] See "Nextel Reports Record Year 2000 Financial Results," rel. Feb 16, 2001, www.nextel.com reporting 6.68 million domestic users as of Dec. 31, 2000.

[13] The Strategis Group estimates 1,369,000 analog users on the 800 MHz band in 2000. Nextel has approximately 86,000 analog users on the 800 MHz band. The Strategis Group "The State of the SMR Industry: Nextel and Dispatch Communications" (Strategis Report) Sept. 2000, p. 4.

[14] Strategis Report, p. 51.

[15] Strategis Report, p. 66.

[16] Gale, I. And O'Brien, D. "The Antitrust Implications of Capacity Reallocation by a Dominant Firm," Journal of Industrial Economics, *forthcoming*.

is not a separate and distinct market, but rather one service that can be offered by CMRS providers, and that Nextel competes in a broad CMRS market with cellular, PCS, SMR providers and other radio providers. Indeed, any CMRS or private provider can provide dispatch services, such as Nextel's Direct Connect®, whether they are operating in the cellular, PCS, SMR or other bands. Nextel's proposed acquisition of the Motorola licenses will allow it to better compete in the CMRS market.

A. Nextel Competes in a Broad CMRS Market

A first step in analyzing the competitive effects of a merger or acquisition is to define the relevant market. The Department of Justice/Federal Trade Commission Merger Guidelines framework for defining a relevant market focuses on demand substitution, i.e., the ability of consumers to substitute away from products that experience price increases. The focus is on the demand for the products in the marketplace, and not on the underlying technical characteristics of the products.

The guidelines start with a narrowly defined product and ask what would happen if a hypothetical monopolist of that product imposed a "small but significant and non-transitory increase in price." If consumers can substitute to other products in such numbers that a price increase would not be profitable for the hypothetical monopolist, then the product group is expanded to include substitute products. The market definition process continues with expanded groups of products until a group of products is identified such that a hypothetical monopolist could profitably impose a hypothetical price increase.

Several features of the DOJ/FTC Guidelines approach are relevant for assessing the competitive effects of Nextel's proposed acquisition of the Motorola licenses. First, the relevant market should be defined based on the services, features and prices available to wireless consumers, and not on whether the spectrum used to provide the service was originally denominated and licensed as SMR, cellular or PCS spectrum. Second, the relevant market definition should account for the technological convergence and the removal of regulatory barriers that have blurred the distinctions between CMRS service providers using different parts of the spectrum. Third, since spectrum capacity is fungible and can be used to provide different services based on consumer demand, spectrum capacity is the appropriate metric for analyzing the CMRS market.

In a variety of proceedings, Congress, the Commission and the DOJ have recognized that all CMRS services are competitive or potentially competitive, and are, therefore, part of the same relevant market. Congress originally created the CMRS category in 1993 to recognize the competition between the different "categories" of mobile service providers and to encourage more competition among them by limiting regulatory disparities in the cellular, PCS and SMR rules and providing a level regulatory playing field.[17] Since then, there has been substantial convergence in the services and features offered by providers

[17] Omnibus Budget Reconciliation Act of 1993, Pub. L. No. 103-66, 107 Stat. 312 (1993)

using the cellular, PCS, SMR and other spectrum. The Commission has reported on the significant competition in the CMRS market in its annual wireless competition report.[18]

B. Nextel's Integrated Mobile Telephone/Dispatch Service

As discussed above, Nextel has built its iDEN network by using spectrum originally denominated as "SMR" and traditionally associated with dispatch services. Today, Nextel's main product is an integrated mobile voice and data offering that includes many functions in addition to dispatch functionality through the Direct Connect® feature. Nextel competes with other CMRS providers by offering an integrated solution for workgroup communication that significantly exceeds the functionality of a traditional dispatch service. Product features include one-to-many dispatch messaging, one-to-one private network interconnect, access to the PSTN, instant conferencing, paging, two-way text messaging, voice mail, call forwarding, POP3 compatible mobile e-mail, internet service, internet portal, and data applications including enterprise data applications—all accessed from the user's handset. Nextel has added a valuable service by bringing together purchasers and suppliers in certain industries within a single communications network—an initiative known as Nextel Business Networks.

By offering a broad wireless business solution, Nextel has been able to target "white-collar" mobile workgroups, which have not been the typical users of traditional dispatch services,[19] as well as traditional dispatch mobile workgroups. Consistent with this targeting, Nextel is bringing to market advanced new features, created through partnerships with application software providers (such as ActSoft, Datatrac, Intermec, Airput and ClickSoftware) and online content providers (such as MSN and Amazon.com).[20] These new features will bring job tracking, scheduling, fleet management, employee timesheet, and specialized content functionality to their users phones. In addition, Nextel is partnering with personal data management application providers (such as Wireless Knowledge and IBM) to bring calendar, contact, and e-mail applications to their phones.[21] Nextel also encourages development of a wide range of next-generation wireless enterprise applications for businesses ranging from medical services to the construction industry through the Nextel Developers Program, which currently consists of more than 200 organizations.[22] Traditional dispatch represents only a fraction of Nextel's current and evolving product functionality.

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[18] In the Matter of Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993, Annual Report and Analysis of Competitive Market Conditions With Respect to Commercial Mobile Service, rel. Aug. 18, 2000 ("FCC Fifth Report").

[19] Strategis Report, p. 53.

[20] Nextel Press Releases, Feb. 5, 2001, Feb 1, 2001, and Sept. 6, 2000.

[21] Nextel Press Release, June 16, 2000, Sept. 25, 2000.

[22] Nextel Press Release, June 16, 2000.

C. Integrated Mobile Telephone/Dispatch Services of Other CMRS Providers

Nextel's integrated package of mobile telephone and dispatch functions has pushed cellular and PCS providers to offer consumers similar integrated communications packages that include dispatch-like features. There are no regulatory or technical constraints preventing cellular or PCS providers from offering dispatch services. These providers can and do offer dispatch functionality in a number of ways. These include free or low-cost mobile-to-mobile or group calling plans, free or low-cost mobile-to-fixed line calling plans, product enhancements such as conference calling and speed dialing, handset features such as Qualcomm's Q-Chat, or network/handset programming features such as Ericsson's TDMA Pro product. These products and features can be used to achieve all of the functionality associated with traditional two-way radio/dispatch services along with mobile "cellular" service.

At present, Sprint, AT&T, Cingular and Verizon all market plans that allow unlimited free wireless-to-wireless communications among defined groups of up to 200, or (in the case of Cingular and Verizon) to all mobile customers in the local area. By using flat-rate pricing, these calling plans have erased one of the characteristics that traditionally defined a dispatch service: flat-rate (as opposed to per-time-unit) pricing. AT&T's "group calling" allows unlimited free calling between mobile units and up to five fixed-lines, thereby providing the base-station functionality that is also characteristic of dispatch services (note that a "mobile" unit could also function as a "base station").

These products are being aggressively developed and marketed by cellular and PCS manufacturers as a replacement for dispatch. AT&T, for example, markets its group calling option as follows: "With the quality, performance, security, and coverage of AT&T Group Calling, there's no longer a need to connect your workgroup with two-way radios or pagers..."[23] AT&T describes its group calling feature as "The Next Generation of Workgroup Communications", and states: "You can keep track of your delivery crew, field technicians, sales force, and dispatch personnel... This is ideal for companies with critical operations that are managed from bases, hubs, or offices."[24]

Equipment vendors are developing new technologies that would allow CMRS providers other ways to offer dispatch features. For example, Qualcomm is developing its Q-Chat product to provide dispatch capability over cellular and PCS systems. In addition, industry analysts are discussing wireless data as a viable alternative to voice communications. As noted by Strategis, wireless data providers are offering fleet management, automated scheduling and dispatch capabilities to vehicle fleets.[25] Thus, even if Southern Linc were correct and the subject acquisition resulted in an artificial increase in dispatch prices, then additional wireless capacity and technology investment could be redirected to provide dispatch services and counter the artificial increase in dispatch prices. Given the actual and potential competition that Nextel faces from

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[23] http://www.attws.com/business/smcorp/explore/plans_phones/grp_calling/index.shtml,

[24] http://www.attws.com/business/smcorp/explore/plans_phones/grp_calling/extend_wkgrp_comm.shtml.

[25] Strategis Report, p. 8

cellular and PCS providers, any artificial price increase would be unprofitable and unsustainable, and highly unlikely to be undertaken to begin with.

D. Competition for Nextel's Integrated Service Offering

Southern Linc fundamentally mischaracterizes Nextel's business model by portraying its products as competing primarily in the dispatch market. The majority of calls on the Nextel network are interconnect, not dispatch.[26] In a TD Marketing Research, Inc. survey of new Nextel customers (commissioned by Nextel), only 19% were previous two-way radio customers, whereas 82% were previous cellular customers.[27] According to the TD Marketing Research study, when new Nextel customers were asked what wireless service providers they had considered, the top four mentions were cellular providers: Sprint PCS, AT&T, Verizon, and CellularOne.[28] Similarly, in a survey of customers who left Nextel, Pacific Marketing Research found that only 2% replaced their Nextel service with two-way radio, whereas 68% replaced their service with cellular/PCS.[29]

The fact that Nextel gains its customers from (and loses them to) cellular/PCS as opposed to dispatch providers is strong evidence that Nextel primarily competes in the broader CMRS market. Among the 68% of customers who replace their service with cellular/PCS almost half say that their new plan has either a special price for mobile-to-mobile or that mobile-to-mobile is free. Contrary to Southern Linc's assertion, consumers are clearly aware of the dispatch-feature offerings provided by the cellular and PCS manufacturers.

Southern Linc cites evidence from investment analysts who state that Nextel customers generally do not have alternatives.[30] This is not true in general, and it is certainly not true for the marginal customers that Nextel is gaining from (and losing to) cellular and PCS providers. But, even if Nextel's customers did not have alternatives, that would not be evidence that pure dispatch service is a separate market. In fact, Nextel's service is not pure dispatch and only a fraction of its customers use dispatch only. So conclusions about a pure dispatch market based on evidence from analysts studying a bundled market are flawed at best.

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[26] Strategis estimates that 53% of Nextel's airtime minutes are interconnect. According to Nextel, that percentage continues to increase over time.

[27] TD Marketing Research, Inc. "Nextel New Customer Welcome Survey" Third Quarter 2000, p. 49. Strategis also reports that the vast majority of Nextel's new customers in the first half of 2000 were former cellular telephone users. Strategis Report, p. 49.

[28] TD Marketing Research, Inc. "Nextel New Customer Welcome Survey" Third Quarter 2000, p. 44.

[29] These exit interviews were conducted in November 2000. (p. 16 of internal Nextel presentation, dated December 15, 2000).

[30] Bauman and Siwek Affidavit, pp. 15-17.

Southern Linc discounts the dispatch features provided by cellular and PCS providers because they are limited to 30 users on a one-to-many call.[31] Not only is 30 a large number—with 30 or more users, it would be very possible to set up a private system—but the vast majority of Nextel calls are one-to-one. Strategis reports that only 2% of Nextel's calls are one-to-many.[32] Presumably only a minute number of those calls involve more than 30 users at a time. As a result, cellular and PCS providers offer today dispatch and interconnect features that could meet the needs of at least 98% of Nextel's calls and probably closer to 100%.

Nextel's integrated package of data, interconnected voice and Direct Connect services faces competition from a variety of different services: conventional cellular and PCS, new PCS and cellular service offerings targeted at the same customers, and more traditional dispatch offerings. All of these services provide competitive discipline in the CMRS market so that there is no likelihood of anticompetitive price increases.

E. Impact of the Proposed Acquisition on the CMRS Market

An analysis of Nextel's share of the CMRS market and market concentration in the major markets analyzed by Southern Linc shows little potential for anticompetitive behavior on Nextel's part. Table 2 shows spectrum holdings, HHIs and changes in HHIs for the CMRS markets in the nine regions analyzed by Southern Linc. Nextel is an important competitor in these markets, but only the fifth or sixth largest in terms of spectrum capacity, with a market share ranging from 9% to 11%.

With 209 MHz of total spectrum available to offer CMRS services in each market, Nextel's proposed acquisition of from 0.25 MHz to 1 MHz from Motorola will have a very small effect on Nextel's share and market concentration. None of the HHIs in these markets following the transfer of licenses from Motorola to Nextel exceed 1,800, and the delta HHIs (i.e. the difference between the pre-transfer HHIs and the post-transfer HHIs) are negligible.

V. Competitive Effects in the Dispatch Market

As discussed above, a preponderance of evidence demonstrates that the relevant market for analyzing the proposed acquisition is the CMRS market. Southern Linc, however, argues that the relevant market for analyzing the proposed acquisition is trunked dispatch. To address the allegations raised by Southern Linc, in this section I examine competitive effects in Southern Linc's purported relevant market of dispatch service. My analysis demonstrates that there are numerous current alternatives for dispatch-only customers. Accordingly, even using Southern Linc's proffered overly narrow market definition, the Commission should approve the transaction.

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[31] Comments of Southern Linc, submitted Nov. 20, 2000 in DA 00-2352, In re Motorola, Inc.; Motorola SMR, Inc., and Motorola Communications and Electronics, Inc. Applications for Consent to Assign 900 MHz SMR Licenses to FCI 900, Inc. ("Southern Motorola Comments") at pp. 5-6.

[32] Strategis Report, p. 50.

A. Competition from CMRS Providers

As discussed above in section IV.A, CMRS providers can and do offer dispatch features as part of integrated services. Nextel and its CMRS competitors are developing new integrated interconnect, data and dispatch services, rather than investing in the provision of pure stand-alone dispatch service. Southern Linc asserts that firms offering integrated services do not provide competitive pressure for the stand-alone dispatch market. Simply because a company provides additional features does not mean that its products do not compete with more spartan offerings. There are lots of examples where producers develop new products with additional features that compete with standalone products. For example, multi-function printer/fax/copier/scanners provide competition for standalone printers, copiers and scanners. Intel's 386 chips provided significant competition for the older 286 chips. Ignoring the competition from advanced technology and features might lead one to conclude that automobile manufacturers provided no competition for buggy manufacturers.

Nextel is trying to attract, and is attracting, customers who generally have a number of other competitive options. As discussed above, the vast majority of Nextel's new customers in the first half of 2000 previously used cellular telephones.[33] As a result, Nextel has to compete with cellular and PCS providers to acquire customers through features, coverage and price. Another 10% of Nextel's new users were new to wireless and presumably chose between all available options. Only 5% of Nextel's new customers used mobile radio (i.e. dispatch). As discussed below, these customers have choices as well. But even if they did not, since they account for such a small fraction of the new customers, Nextel's pricing plans must be targeted to get the bulk of customers. In other words, these customers are "protected" by the purchasing habits of other customers.[34]

Cellular providers, PCS providers and Nextel all put pressure on analog dispatch providers. Indeed, Strategis reports that 27% of analog dispatch churn results from competition from cellular/PCS/Nextel.[35]

Moreover, nothing prevents consumers from subscribing only to Nextel's Direct Connect® service. At year end 2000, Nextel had 783,000 mobile units subscribe only to its dispatch service. Direct Connect® is a significant improvement over traditional analog dispatch, because it expands the typical dispatch service area, uses the spectrum more efficiently, provides higher voice quality and provides extra security.

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[33] Strategis Report, p. 49.

[34] It is well recognized in antitrust analysis that if a producer were unable to discriminate between different types of customers and desires to attract those with alternatives because that group is significantly larger than the group without alternatives, then the small group would be protected from artificially high prices.

[35] Strategis Report, p. 28.

B. Stand-Alone Dispatch Alternatives

Pure dispatch may be a useful service, but Nextel's iDEN service and other integrated services are leading to a diminution in the number of customers demanding dispatch-only services.[36] Nevertheless, there are numerous alternatives for stand-alone dispatch. First, private radio competes with commercial dispatch services, because users have several choices: maintaining a private radio network, contracting for a private network, contracting for service on a private network or subscribing to a commercial service. Virtually all of Motorola's customers would qualify for licenses in the Business Pool or as Business users so that they could use the same spectrum that Southern Linc has incorporated into its SMR service (and ignored in their counting of spectrum available to serve dispatch customers). Second, there are more than 16 million private radio users in the 150 MHz and 450 MHz private radio bands[37] and equipment is easily available for use on those bands. The "refarming" that will take place in these bands over the next few years will increase capacity at the same time the projected number of users is declining. This means that there should be additional capacity available to provide dispatch or other services on the 150 MHz and 450 MHz bands. Third, the 220 MHz band provides some dispatch service, is expected to provide more in the future, and to the extent that there is more demand for dispatch service, the equipment manufacturers and license holders in this band will have greater incentives to provide service more rapidly.

Fourth, the Commission recently auctioned the 700 MHz "Guard Band" spectrum that will provide more opportunities for the provision of dispatch service. Since the Commission's rules for the 700 MHz Guard Band preclude the use of a cellular-like architecture, the guard band spectrum may be used for exactly the type of dispatch service that Southern Linc envisions. Last year, the Commission auctioned licenses for two MHz and four MHz blocks throughout the country. Nextel won a large number of the four MHz licenses, including all of the four MHz licenses in the nine major urban areas analyzed by Southern Linc. However, the Commission requires that at least half of the spectrum be leased to non-affiliated entities. This means that even though Nextel acquired the license to four MHz in many areas, at least two MHz of that spectrum will be used by non-affiliated entities. Nextel won none of the two MHz licenses so those are also available for use.[38] That means that a total of at least four MHz will be available to non-Nextel parties in every area.[39] Four MHz is much more than the spectrum at stake in this transaction (a maximum of 1 MHz in any one geographic area).

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[36] Strategis estimates that the number of private dispatch users will decrease by 1 million over the next four years. Strategis Report, p. 65.

[37] FCC Fifth Report, p. 69.

[38] Access Spectrum, Dominion 700, and Pegasus Guard Band won the two MHz licenses in these regions.

[39] It should be noted that in many areas, there are incumbent television broadcasters so this spectrum may not be usable right away.

C. Southern Linc's Analysis Overstates Concentration in the Dispatch Market

Southern Linc bases its competitive analysis of the proposed acquisition on market concentration as measured by channel pairs in the 800 MHz SMR, 900 MHz SMR and 220 MHz bands. This might be an acceptable method for analyzing competitive effects in a regulatory regime where 800 MHz SMR, 900 MHz SMR and 220 MHz spectrum were mandated to be used for dispatch, and where no other spectrum could be used for dispatch services. However, in the current environment where spectrum is fungible and can be redirected to its highest valued use, Southern Linc's methodology does not provide a meaningful or reliable indication of the competitive effects of the acquisition.

Even if we accept Southern Linc's definition of a dispatch-only market, Southern Linc's analysis provides an erroneous description of "concentration." First, Southern Linc significantly over counts Nextel's position in the provision of dispatch service. As discussed above, it is incorrect to exclude from this analysis spectrum capacity held by cellular and PCS providers. If, however, Southern Linc chooses to do that, it should also exclude the spectrum capacity held by Nextel that is used for purposes other than dispatch services (and used for the same purposes as the excluded cellular and PCS spectrum). Since only 47% of Nextel's minutes are dispatch and the compression ratio is 6:1 for dispatch and 3:1 for interconnect, then only 0.47/(0.47+2(0.53))=31% of Nextel's capacity is used for dispatch and should be included in Southern Linc's concentration analysis.

Southern Linc also excludes the PCS spectrum at 1.9 GHz because it claims those frequencies are not substitutable for the spectrum at 800 and 900 MHz.[40] While it is true that higher frequencies propagate over a somewhat shorter distance than 800 MHz frequencies, they are still substitutable. For example, few would dispute that PCS providers compete with cellular providers who use the 800 MHz band. The propagation characteristics may preclude a PCS operator from using its spectrum for a wide-area single tower system, but that is not the service being provided by Nextel or Southern Linc. Both operate multiple site systems similar to those of 1.9 GHz PCS providers. Yet, Southern Linc includes in its calculations the entire spectrum Nextel uses to operate its iDEN system while excluding all PCS and cellular spectrum. Southern Linc's analysis also excludes several other alternatives for dispatch-only service: the 450 MHz spectrum used for private radio, and the recently auctioned 700 MHz guard band spectrum.

Finally, Southern Linc does not account for Nextel's 800 MHz spectrum holdings correctly. There are a total of 530 channels available in each market: 200 upper band channels, 150 lower band channels, 80 interleaved SMR channels, and 100 Business and Industrial/Land Transportation pool channels.[41] In counting Nextel's usable 800 MHz channels in each market, Southern Linc includes all Nextel's channel holdings, including

[40] Southern Motorola Comments at pp. 6-7.

[41] Fewer channels are available in the U.S. – Canada and U.S. – Mexico border areas due to allocation of the channels among the two countries. See 47 CFR § 90.619(b).

its holdings of business and industrial/land transportation channels.[42] However, Southern Linc's calculation assumes only 430 total channels available in each market rather than the correct total of 530. In addition, Southern Linc uses the results of the 800 MHz overlay auctions rather than the actual channel counts, overstating the number of channels that Nextel controls. This occurs because there are many areas where Nextel has the overlay license, but others have site-specific licenses that the overlay licensee is forced to protect or relocate to equivalent spectrum.[43] In either case, the incumbents need to be counted as they provide service and will have the opportunity to provide service in the long run.

When I redo Southern Linc's analysis to: 1) include only the spectrum that Nextel uses for dispatch calls; 2) include 450 MHz and 700 MHz spectrum; and 3) properly account for 800 MHz spectrum, the results suggest that even within the artificially narrow market definition proposed by Southern Linc, the pre-transfer and post-transfer HHIs are not large enough to conclude that Nextel possesses market power or that the transaction would cause serious concern. Table 3 shows that for the nine major urban areas analyzed by Southern Linc all of the HHIs are less than 800 and the delta HHIs do not exceed 60.

Even these calculations overstate concentration in the dispatch market. First, these calculations do not include any of the bandwidth used by cellular or PCS providers for the provision of dispatch-like services. Adding the spectrum used for "mobile-to-mobile" service would reduce the delta HHIs arising from the transaction. Second, these calculations exclude certain spectrum that can be used for offering dispatch services: 20 MHz of spectrum from 150 – 170 MHz and 12 MHz spectrum from 470 – 512 MHz that was reallocated from television channels 14-20 in major cities. Including this spectrum, which can be used for private radio, would reduce market concentration and the delta HHIs arising from the transaction.

Finally, as noted in the DOJ/FTC Merger Guidelines, concentration statistics are only a first step in analyzing the competitive effects of a merger or acquisition. As discussed above, even in the unlikely event that Nextel attempted to charge supra-competitive prices for dispatch services, there are numerous opportunities for competitive entry into the provision of dispatch services, and such entry would thwart any attempted price increase. Because of the many providers and potential providers of dispatch service, there are no competitive concerns with Nextel's proposed acquisition of Motorola's 900 MHz licenses.

While this section has analyzed the competitive effects in a hypothetical dispatch market and shown there are no competitive concerns for dispatch customers, the analysis does not affect my earlier conclusion that the appropriate relevant market includes all CMRS spectrum. All CMRS spectrum can be used to provide dispatch (and interconnect, data,

[42] Baumann and Siwek Affidavit, Table EI 2.1

[43] In the upper 200 channels, the overlay license winner has the right to relocate the incumbent licensees or to let them remain and protect them from interference. In the lower 80 and 150 general category channels, the auction winner must protect the incumbents and does not have relocation rights.

etc.) just like the spectrum Nextel, Southern and Motorola use, and therefore, all of the spectrum should be included in the same relevant CMRS market to analyze this transaction.

VI. Roaming Analysis

Southern Linc has stated that instituting a roaming requirement on Nextel alone would mitigate the concerns Southern Linc claims arise from the merger. There are two significant problems with this condition. First, a roaming requirement is not related to the transaction at hand nor to the alleged harms raised by Southern. Second, instituting a roaming requirement on Nextel alone could cause competitive disincentives that would harm consumers. An additional problem is that it would saddle the fifth or sixth largest competitor in the CMRS marketplace with a requirement that no other provider faces.[44]

Southern Linc claims that the Motorola transaction would increase concentration in the dispatch market by removing a competitive dispatch provider. As I understand it, Southern Linc's request for roaming would only enable its subscribers to roam onto Nextel's network for *interconnected* calls. None of Nextel's roaming partners have the ability to roam with dispatch calling features. Nor can Nextel's customers use their dispatch service seamlessly on their partners' systems. In fact, a Nextel customer cannot even roam within the Nextel system for dispatch services. For example, a Nextel customer living in Chattanooga, Tennessee can use his dispatch service in all of Nextel's coverage areas within Tennessee, and he can even use it into portions of Northern Georgia. However, as he travels south in Georgia toward Atlanta, he can no longer use his dispatch service and custom calling groups because he has moved into a different Nextel dispatch system, and the iDEN network on which Nextel provides its services is unable to support this kind of roaming.

If Southern Linc wants to provide a nationwide interconnected service, then there are many possible avenues. It could put together a nationwide system like AT&T Wireless, Sprint PCS, Verizon, Cingular, Nextel, and VoiceStream. It has the option of striking roaming deals with any or all of these or other providers like others have. Although I am not a technical expert on roaming, Southern Linc's claim that Nextel is the only viable roaming partner rings hollow. First, Southern Linc points to Nextel's international roaming arrangements in its petitions,[45] but ignores the fact that Nextel's customers must purchase the i2000 phone, a dual-band, dual-mode phone, to use these foreign systems. This phone works on iDEN systems in the U.S. and on 900 MHz GSM systems abroad. In addition many big PCS and cellular companies routinely sell (and subsidize) dual and tri mode and dual band phones for their customers, enabling operations across 800 MHz and 1.9 GHz frequencies. This is so that their customers can have the roaming advantages they demand in the competitive CMRS marketplace.

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[44] In this analysis I do not address network differences or other technical issues associated with roaming.

[45] Comments of Southern Linc, filed Jan. 5, 2001 in "In re Automatic and Manual Roaming Obligations Pertaining to Comm. Mobile Services", WT Docket No. 00-193, at pp. 12-13.

Even if the Commission were to institute a roaming rule, it would soon be asked to weigh in on the price for roaming if Southern Linc really had no alternative. Absent price regulation, Nextel would be free to charge whatever price it wanted (if Southern Linc really had no competitive alternative). Presumably Southern Linc would be unhappy with this result and would complain to the Commission (if lawyers fees were less than the expected gain from protesting).

Usually, contracts between companies are the result of negotiation and mutually benefit both parties. In this case, Nextel would gain access to a small area Southern Linc covers, and Southern Linc would gain access to the entire country. As a result, Nextel would want to levy significant roaming charges on Southern Linc's customers and be willing to pay very little for the additional coverage offered by Southern. In addition, each roaming arrangement has fixed costs so that unless the benefits were high, or the costs low, Nextel might not even find it profitable to enter into negotiations. For example, it is my understanding that Nextel's systems are seamlessly compatible with Nextel partners systems. If roaming with Southern Linc requires additional or different configurations, this could cause additional costs that would eliminate the benefits from a roaming agreement with Southern Linc.

Instituting a roaming requirement on Nextel would dampen Southern Linc's (and other providers') incentives to build out their own systems. Southern Linc would have less incentive to aggressively expand its service territory because it could simply rely on Nextel's coverage. In fact, Southern Linc might even have less incentive to fully cover its existing service territory. For example, there might be areas that would not generate enough calls to justify construction of a cell site to remove a dead spot in the system, but would cause enough dissatisfaction among customers to cause them to drop service. Without a roaming requirement, Southern Linc might find it worthwhile to construct. But with a roaming rule, it could rely on Nextel to undertake the money losing expense of providing service to cover the dead spot.[46]

While it is not surprising that Southern Linc would like the FCC to mandate low-cost access to a competitor's network, it is generally understood that such mandates should only occur in situations involving access to "essential facilities." This is because mandated access distorts investment incentives. The usual conditions necessary to consider mandating access are that a monopolist controls a bottleneck facility, that it is difficult or impossible to duplicate the facility, and that there are no alternatives to the facility. While it might cost Southern Linc more money to avoid the use of Nextel's network or to pay for its use in a commercial transaction, mere expense is not sufficient to prove an essential facilities case.

In this case, none of the three conditions hold. Nextel is not a monopolist. It is not difficult or impossible to duplicate the facility. There are alternatives to Nextel's facilities. Nextel has spent more than $12 billion ($5.5 billion in spectrum acquisitions

[46] While this may be statically efficient, it would shift the cost burden to Nextel from Southern Linc, possibly above the roaming fees paid, and would reduce the dynamic competition between networks.

and $7 billion in network buildout) to develop its nationwide network. In a competitive market, it should be allowed to control access to that network. Southern may have to spend money to compete effectively in the CMRS market, but Nextel and all of the other major CMRS providers have spent significant amounts of money to build their networks. Just like the antitrust laws do not require Safeway to let corner grocery stores use its trucks and warehouses, the Commission should not mandate the use of competitive facilities.

A roaming requirement could also affect Nextel's ability to upgrade its service. Coordinating multiple firms to upgrade service is much more difficult than having a single firm make the upgrade decision itself. This is clearly evident in the Commission's refarming docket where coordinated action required the Commission to mandate a transition path.

The proposed roaming requirement does not address any of Southern Linc's alleged problems with the proposed transaction. Rather, it is an attempt to use the current transaction to gain a commercial advantage through the regulatory process. The competitive alternatives available show that such a rule is not necessary. Finally, instituting a roaming rule would create incentives for Southern Linc not to compete as vigorously as it might otherwise. For all of these reasons, the Commission should decline to adopt a roaming rule as a condition for approval of Nextel's acquisition of Motorola's 900 MHz licenses.

VII. Conclusion

Analysis of the proposed transaction shows that moving the spectrum from use in an analog, high-power dispatch system configuration to Nextel's iDEN service will promote competition in the CMRS market and generate substantial consumer benefits. At the same time there are no real competitive concerns with the transaction. CMRS customers in general will benefit from the enhanced efficiency and ability for a provider to operate efficiently, provide new services and expand output. Dispatch customers will also benefit from the higher quality services, and those who want plain vanilla dispatch services should still have multiple options.

Nextel is only one of many providers in the CMRS marketplace. Southern Linc's argument would allow AT&T Wireless, Verizon, Sprint, or Cingular to acquire the Motorola spectrum and use it to provide exactly the same services as Nextel even though each of them has much more spectrum than Nextel. Restrictions on the fifth or sixth largest player in a market that do not apply to any of the top four or five firms are unheard of in competition policy.

The Commission should adhere to its own statements about the importance of marketplace driven approaches to spectrum policy and allow Nextel to acquire the Motorola spectrum without any roaming or other conditions imposed. In that way, the spectrum will be utilized in the way that maximizes the value of wireless service to the public.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief. Executed on March 7, 2001

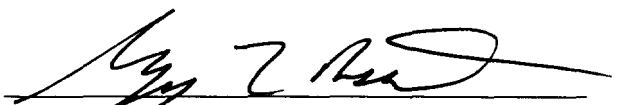

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Table 1

Largest CMRS Spectrum Licensees (By Capacity) in Major Urban Areas[1]

All Figures in MHz

New York			Los Angeles			Chicago			San Francisco			Detroit		
1.	AT&T	45.00	*1.*	AT&T	45.00	*1.*	Verizon	65.00	*1.*	AT&T	35.00	*1.*	VoiceStream	40.00
2.	Verizon	45.00	*2.*	Verizon	45.00	*2.*	AT&T	30.00	*2.*	Verizon	35.00	*2.*	Cingular	35.00
3.	VoiceStream	30.00	*3.*	Cingular	30.00	*3.*	VoiceStream	30.00	*3.*	MetroPCS	30.00	*3.*	AT&T	30.00
4.	Sprint	30.00	*4.*	Sprint	30.00	*4.*	Cingular	25.00	*4.*	Sprint	30.00	*4.*	Sprint	30.00
5.	**Nextel[2]**	**19.90**	***5.***	**Nextel**	**21.85**	***5.***	**Nextel**	**20.70**	*5.*	Cingular	20.00	*5.*	Verizon	25.00
6.	Cingular	10.00	*6.*	VoiceStream	20.00	*6.*	Sprint	20.00	*6.*	VoiceStream	20.00	***6.***	**Nextel**	**18.75**
7.	Northcoast	10.00							***7.***	**Nextel**	**19.83**	*7.*	Nextwave	10.00

Dallas			Philadelphia			Washington			Atlanta		
1.	AT&T	45.00	*1.*	Verizon	45.00	*1.*	Verizon	45.00	*1.*	Cingular	35.00
2.	Cingular	35.00	*2.*	Cingular	35.00	*2.*	AT&T[3]	40.00	*2.*	AT&T	30.00
3.	Sprint	30.00	*3.*	AT&T	30.00	*3.*	Cingular	35.00	*3.*	Metro PCS	30.00
4.	Verizon	30.00	*4.*	Sprint	30.00	*4.*	Sprint	30.00	*4.*	VoiceStream	30.00
5.	VoiceStream	30.00	*5.*	VoiceStream	30.00	***5.***	**Nextel**	**20.20**	*5.*	Verizon	25.00
6.	**Nextel**	**23.90**	***6.***	**Nextel**	**22.20**	*6.*	VoiceStream	20.00	***6.***	**Nextel**	**18.75**
									7.	Alltel	10.00
									8.	Sprint	10.00

[1] *Geographic regions are those used in Southern Linc's analysis.*

[2] *Nextel spectrum is not contiguous; cellular and PCS licenses were assigned in blocks of at least 5 MHz (and up to 30 MHz).*

[3] *Includes 10 MHz of PCS spectrum held by Dobson Communications Corp. (DCC).*

Note: Includes cellular, PCS, 800 MHz (less public safety), 900 MHz SMR, 220 MHz, and 700 MHz Guard Band spectrum

Source: Updated Attachment 1 to Exhibit B of the Assignment Applications, submitted in an ex parte letter to Lauren Kravets, Feb. 22, 2001; FCC Results of Guard Band Auction; Nextel.

Table 2

CMRS Market Concentration in Major Urban Areas

Includes Cellular, PCS, 800 MHz (less public safety), 900 MHz SMR, 220 MHz, and 700 MHz Guard Band spectrum.

Region[1]	AT&T[2]	Cingular	Metro PCS	Sprint	Verizon	Voice Stream	Other PCS[3]	Motorola[4]	Southern Linc[5]	Nextel[6]	220 MHz[7]	Other 700 MHz[8]	Other 800 MHz[9]	Other 900 MHz[10]	Total CMRS Spectrum	Total Pre-Transfer HHI	Total Post-Transfer HHI	Δ HHI
New York																		
Total Spectrum (MHz)	45.00	10.00	0.00	30.00	45.00	30.00	10.00	1.00	0.00	19.90	1.55	4.00	10.35	2.25	209.1			
As % of Total Spectrum	*22%*	*5%*	*0%*	*14%*	*22%*	*14%*	*5%*	*0%*	*0%*	*10%*	*1%*	*2%*	*5%*	*1%*		1,482	1,491	9
Los Angeles																		
Total Spectrum (MHz)	45.00	30.00	0.00	30.00	45.00	20.00	0.00	0.50	0.00	21.85	1.55	4.00	9.15	2.00	209.1			
As % of Total Spectrum	*22%*	*14%*	*0%*	*14%*	*22%*	*10%*	*0%*	*0%*	*0%*	*10%*	*1%*	*2%*	*4%*	*1%*		1,545	1,550	5
Chicago																		
Total Spectrum (MHz)	30.00	25.00	0.00	20.00	65.00	30.00	0.00	0.25	0.00	20.70	1.55	4.00	9.80	2.75	209.1			
As % of Total Spectrum	*14%*	*12%*	*0%*	*10%*	*31%*	*14%*	*0%*	*0%*	*0%*	*10%*	*1%*	*2%*	*5%*	*1%*		1,718	1,720	2
San Francisco																		
Total Spectrum (MHz)	35.00	20.00	30.00	30.00	35.00	20.00	0.00	0.75	0.00	19.83	1.55	4.00	10.80	2.13	209.1			
As % of Total Spectrum	*17%*	*10%*	*14%*	*14%*	*17%*	*10%*	*0%*	*0%*	*0%*	*9%*	*1%*	*2%*	*5%*	*1%*		1,253	1,260	7
Detroit																		
Total Spectrum (MHz)	30.00	35.00	0.00	30.00	25.00	40.00	10.00	0.25	0.00	18.75	1.55	4.00	1.00	1.50	197.1			
As % of Total Spectrum	*15%*	*18%*	*0%*	*15%*	*13%*	*20%*	*5%*	*0%*	*0%*	*10%*	*1%*	*2%*	*1%*	*1%*		1,471	1,473	2
Dallas																		
Total Spectrum (MHz)	45.00	35.00	0.00	30.00	30.00	30.00	0.00	0.50	0.00	23.90	1.55	4.00	6.60	2.50	209.1			
As % of Total Spectrum	*22%*	*17%*	*0%*	*14%*	*14%*	*14%*	*0%*	*0%*	*0%*	*11%*	*1%*	*2%*	*3%*	*1%*		1,496	1,502	5
Philadelphia																		
Total Spectrum (MHz)	30.00	35.00	0.00	30.00	45.00	30.00	0.00	0.75	0.00	22.20	1.55	4.00	7.80	2.75	209.1			
As % of Total Spectrum	*14%*	*17%*	*0%*	*14%*	*22%*	*14%*	*0%*	*0%*	*0%*	*11%*	*1%*	*2%*	*4%*	*1%*		1,480	1,487	8
Washington																		
Total Spectrum (MHz)	40.00	35.00	0.00	30.00	45.00	20.00	0.00	0.50	0.00	20.20	1.55	4.00	10.30	2.50	209.1			
As % of Total Spectrum	*19%*	*17%*	*0%*	*14%*	*22%*	*10%*	*0%*	*0%*	*0%*	*10%*	*1%*	*2%*	*5%*	*1%*		1,508	1,512	5
Atlanta																		
Total Spectrum (MHz)	30.00	35.00	30.00	10.00	25.00	30.00	10.00	0.25	12.00	18.75	1.55	4.00	0.00	2.50	209.1			
As % of Total Spectrum	*14%*	*17%*	*14%*	*5%*	*12%*	*14%*	*5%*	*0%*	*6%*	*9%*	*1%*	*2%*	*0%*	*1%*		1,203	1,205	2

[1] *Geographic regions are those used in Southern Linc's analysis.*

[2] *Includes 10 MHz of PCS spectrum in Washington, DC held by Dobson Communications Corp. (DCC).*

[3] *Other PCS spectrum is held by a single licensee in New York (Northcoast), Detroit (Nextwave), and Atlanta (Alltel).*

[4] *Source: Updated Attachment 1 to Exhibit B of the Assignment Applications, submitted in an ex parte letter to Lauren Kravets, Feb. 22, 2001.*

[5] *Assumes Southern Linc holds licenses in Atlanta for all 800 MHz channels not held by Nextel.*

[6] *Includes Nextel's 700 MHz Guard Band, 800 MHz and 900 MHz spectrum. Nextel spectrum is not contiguous; cellular and PCS licenses were assigned in blocks of at least 5 MHz (and up to 30 MHz). Source for 800 and 900 MHz spectrum: Updated Attachment 1 to Exhibit B of the Assignment Applications, submitted in an ex parte letter to Lauren Kravets, Feb. 22, 2001. Source for 700 MHz Guard Band spectrum: FCC Results of Guard Band Auction.*

[7] *Source: Baumann and Siwek Affidavit, Tables EI_7.1-EI_7.9.*

[8] *Source: FCC Results of Guard Band Auction. Includes 1 MHz "A" band license, 1 MHz "A" band unaffiliated user, and 2 MHz "B" band unaffiliated user. Assumes unaffiliated users do not hold other spectrum in the same urban area.*

[9] *Assumes spectrum not held by Nextel or Southern Linc is evenly divided among 5 firms who do not hold any other spectrum in the same urban area.*

[10] *Asumes 900 MHz commercial spectrum (200 channels) not held by Nextel or Motorola is held by firms with 60 channels of spectrum (e.g. if 140 channels available after accounting for Nextel and Motorola, assume two firms each with 60 channels, one firm with the remainder, 20 channels.)*

Source for Cellular and PCS spectrum holdings: Nextel.

Table 3

Dispatch Concentration in Major Urban Areas Excluding PCS and Cellular Spectrum

Total Spectrum includes 220 MHz, 450 MHz, 700 MHz, 800 MHz (less public safety), and 900 MHz (less public safety) but excludes PCS and Cellular band dispatch communicatic

Region[1]	Motorola	Southern Linc[2]	Nextel[3]	220 MHz	450 MHz[4]	Other 700 MHz	Other 800 MHz	Other 900 MHz	Total Spectrum Used for Dispatch	Total Pre-Transfer HHI	Total Post-Transfer HHI	Δ HHI
New York												
Total Spectrum (MHz)	1.00	0.00	7.50	1.55	20.00	4.00	10.35	7.25	51.6			
As % of Total Spectrum	*2%*	*0%*	*15%*	*3%*	*39%*	*8%*	*20%*	*14%*		498	554	56
Los Angeles												
Total Spectrum (MHz)	0.50	0.00	8.10	1.55	20.00	*400%*	9.15	7.00	50.3			
As % of Total Spectrum	*1%*	*0%*	*16%*	*3%*	*40%*	0.08	*18%*	*14%*		540	572	32
Chicago												
Total Spectrum (MHz)	0.25	0.00	7.74	1.55	20.00	4.00	9.80	7.75	51.1			
As % of Total Spectrum	*0%*	*0%*	*15%*	*3%*	*39%*	*8%*	*19%*	*15%*		515	530	15
San Francisco												
Total Spectrum (MHz)	0.75	0.00	7.48	1.55	20.00	*400%*	10.80	7.13	51.7			
As % of Total Spectrum	*1%*	*0%*	*14%*	*3%*	*39%*	0.08	*21%*	*14%*		501	543	42
Detroit												
Total Spectrum (MHz)	0.25	0.00	7.15	1.55	20.00	4.00	1.00	5.75	39.7			
As % of Total Spectrum	*1%*	*0%*	*18%*	*4%*	*50%*	*10%*	*3%*	*14%*		657	680	23
Dallas												
Total Spectrum (MHz)	0.50	0.00	8.73	1.55	20.00	*400%*	6.60	7.50	48.9			
As % of Total Spectrum	*1%*	*0%*	*18%*	*3%*	*41%*	0.08	*14%*	*15%*		585	622	37
Philadelphia												
Total Spectrum (MHz)	0.75	0.00	8.21	1.55	20.00	4.00	7.80	7.75	50.1			
As % of Total Spectrum	*1%*	*0%*	*16%*	*3%*	*40%*	*8%*	*16%*	*15%*		540	589	49
Washington												
Total Spectrum (MHz)	0.50	0.00	7.59	1.55	20.00	*400%*	10.30	7.50	51.4			
As % of Total Spectrum	*1%*	*0%*	*15%*	*3%*	*39%*	0.08	*20%*	*15%*		505	534	29
Atlanta												
Total Spectrum (MHz)	0.25	5.64	7.15	1.55	20.00	4.00	0.00	7.50	46.1			
As % of Total Spectrum	*1%*	*12%*	*16%*	*3%*	*43%*	*9%*	*22%*	*16%*		742	759	17

[1] *Geographic regions are those used in Southern Linc's analysis.*

[2] *Excludes the 53% of Southern Linc's 800 MHz spectrum used for interconnect, based on the assumption that Southern Linc has same proportion of interconnect and dispatch calls as Nextel.*

[3] *Includes Nextel's 700 MHz Guard Band, 800 MHz, and 900 MHz spectrum. Excludes the 69% of Nextel's 800 MHz and 900 MHz spectrum used for interconnect.*

[4] *Assumes that spectrum is divided evenly among ten firms who do not hold any other spectrum in the same urban area.*

See footnotes to Table 2 for description of my analysis of 220 MHz, 700 MHz Guard Band, 800 MHz, and 900 MHz bands.
Source: Sources as in Table 2.

Exhibit A
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Federal Communications Commission, Washington, DC
Deputy Chief Economist, 1995-1997
Acting Chief Economist, Common Carrier Bureau, 1996
Senior Economist, Office of Plans and Policy, 1994-1995

Law and Economics Consulting Group, Berkeley, CA
Senior Economist, 1990-1994

Economists Incorporated, Washington, DC
Economist/Research Associate, 1986-1988

Education

Stanford University, M.A., Ph.D., in Economics, Specialized in the fields of Industrial Organization and Public Finance. 1986, 1994.

University of California, Berkeley, A.B. in Economics with Honors. 1984.

Papers and Publications

"An Economic Analysis of the Effects of FCC Regulation on Land Mobile Radio," unpublished Ph.D. dissertation, Stanford University. 1994.

"Competition in Local Telecommunications: Implications of Unbundling for Antitrust Policy" in Brock, G., (ed.) Toward a Competitive Telecommunication Industry: Selected Papers from the 1994 Telecommunications Policy Research Conference, LEA Associates, Mahwah, NJ. 1995 (with Harris, R. and Teece, D.).

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Other Professional Activities

Referee for *American Economic Review, Rand Journal of Economics, Industrial and Corporate Change, Journal of Industrial Economics, Telecommunication Systems.*

FCC Economist Panel Hearing on the Economics of Interconnection, May, 1996.
FCC Economist Panel Hearing on the Economics of RBOC Entry under Section 271, July, 1996.

FCC Economist Panel Hearing on Competitive Bidding for Universal Service Provision, March, 1997
Consultant for the World Bank, 1998.
FCC Academic Expert Panel on "A New FCC for the 21st Century," June 1999.
FCC Academic Expert Panel on AT&T—MediaOne Merger, February, 2000.

Awards

Chairman's Distinguished Service Award, FCC, 1997.
University of California, Brad King Award for Young Alumni Service, 1994.
National Performance Review Hammer Award for Reinventing Government, 1994.
Telecommunications Policy Research Conference Graduate Student Paper Competition, 2nd Place, 1994.
John M. Olin Foundation Fellowship, 1989-1990.
Charles Mills Gayley Fellowship, 1985.
Stanford University Fellowship, 1984-1985.

ATTACHMENT 2

HOW THE JONESES KEEP UP WITH THE JONESES.

FOR $9.95 EACH MONTH, GET WIRELESS SERVICE FOR EVERYONE IN THE FAMILY.

PLUS BUY A NOKIA 5165 DIGITAL PHONE FOR JUST $29.

Holiday shopping has never been easier, thanks to this terrific offer from Southwestern Bell Wireless. With FamilyTalk, get up to four additional lines, share minutes and talk free between family for as little as $9.95 per month, per line. Plus when you sign up for new service, you'll get:

- A Nokia 5165 digital phone for just $29
- 500 minutes of FREE local weekend calling per month
- 500 minutes of FREE local Phone-to-Phone * calling per month — free calls to and from family members and any other Southwestern Bell Wireless customer
- Three months of FREE Smart Rescue* roadside assistance

There's no better way for busy families to stay in touch before, during and after the holidays.

NEW RATES

All plans include free local Phone-to-Phone calling

1,050 Minutes	1,200 Minutes	1,300 Minutes	1,500 Minutes	1,700 Minutes	2,200 Minutes
500 Phone-to-Phone				500 Phone-to-Phone	500 Phone-to-Phone
$25	$35	$45	$55	$75	$100

Southwestern Bell | SBC global network

NOKIA

ASK ABOUT OUR REGIONAL RATES, NO ROAMING AND NO LONG-DISTANCE CHARGES IN ARKANSAS, LOUISIANA, NEW MEXICO, OKLAHOMA AND TEXAS.

Southwestern Bell The Store

PREMIUM AGENT LOCATIONS

AUTHORIZED RETAILERS

WAL★MART RadioShack. HAWK SEARS

AUTHORIZED AGENTS

To order via phone, call
1-888-335-BELL (2355)
www.swbellwireless.com

Verizon Wireless

Mobile to Mobile minutes now included.

Digital Choice 250 Plan:

- 250 Anytime Local Minutes
- 500 Night and Weekend Minutes
- 250 Mobile to Mobile Minutes between Verizon Wireless customers

That's 1000 minutes a month.

$19.99 a month for three months

($29.* a month thereafter)

Audiovox 9000 digital phone **FREE**

(After $50 mail-in bill credit. 2-year agreement required.)

Join in.

Local Calling Plan Offer Available to Current Customers.

call 1.866.2 JOIN IN

shop online @ www.verizonwireless.com

verizonwireless

VERIZON WIRELESS COMMUNICATIONS STORES

SANTA CRUZ PLAZA
3738 S. 16th Ave.
(M-F 9-7, Sat 9-6, Sun 11-5)
(520) 320-4849

PARK PLACE MALL
5870 E. Broadway Blvd., Suite 206
(M-Sat 10-9, Sun 12-6)
(520) 320-4851

SPEEDWAY-CRAYCROFT PLAZA
5480 E. Speedway C101
(M-F 9-7, Sat 9-6, Sun 11-5)
(520) 320-4840

AUTHORIZED AGENTS
Joe Cristiani's Mobile Communications
Circuit City
RadioShack.

Ask about getting a free phone every two years (up to $100 value).

Digital Plan Offer: Subject to terms of Cellular Service Agreement. Price Plans and Promotions. One or two-year agreement required (with credit approval). $30 service establishment fee and early termination fees apply. Cannot be combined with other offers. Usage is rounded up to the next full minute. Unused allowance lost. All calls are subject to taxes and other charges. Digital service not available in all areas. CDMA phone required. Nights: Monday through Friday 7:00 p.m. - 7:00 a.m., Weekends: 7:00 p.m. Friday through 7:00 a.m. Monday. Mobile to mobile minute access requires all parties to be on the local Verizon Wireless network with geographic and other restrictions (see Calling Plan/Coverage Map brochure for mobile to mobile geographic restrictions). Phone offer: Phone is $49.99 with 1-year service agreement. Offer only available on select calling plans of $29.99 or more. New lines of service only. Phone and phone price may vary at authorized agent locations. While supplies last. Offer available at select Verizon Wireless markets and expires 11/30/00. ©2000 Verizon Wireless. All rights reserved.

MORE TIME FOR YOUR FAMILY.

CAN YOU HANDLE THAT?

NOW ADD A PERSON FOR $20

Start with more total shared minutes to call anyone you want.

600 Anytime Minutes plus **2000** Nationwide Weekend Minutes only **$39.99** Per Month

Add a person and get an additional 500 VoiceStream-to-VoiceStream minutes for $20 per month.

VoiceStream Wireless
Get more from life.

No one gives you more multi-state anytime minutes and included features for $39.99 a month. Guaranteed.

Call 1-888-STREAMS (787-3267) for details

voicestream.com

Western Mountain Neighborhood

INCLUDES LONG DISTANCE AND DIGITAL ROAMING WITHIN AZ, CO, ID, NM, UT, WY & EL PASO*

VOICESTREAM STORES

Crossroads Shopping Center
Grant and Swan 319-3620
Foothills Mall
La Cholla and Ina 297-2350
North Oracle
Oracle Rd. and Auto Mall Dr. 293-9630
San Clemente Center
Broadway and Alvernon 323-8033

AUTHORIZED DEALERS

A+ Communications
Active Connection
Advantage of Nogales
Advantage Wireless
3384 S. 6th Ave.
El Con Mall
Tucson Mall
929 E. University
5650 S. 12th Ave.
1815 E. Prince
Blue Ridge Wireless
Gotta Go Wireless
Jack's Airwave Communications
Larrivals of Nogales
Nice All
Nogales Cellular
PageMetro & Cellular
The Phone Guys
Ultra Wireless
Wide Cellular of Green Valley
Wide Cellular of Nogales
Wireless Station
WOW Cal Wireless

amazon.com

CIRCUIT CITY

The Activation Center

*Coverage not available in all areas. Map is not a representation of coverage. Anytime minutes quoted above are local airtime (pay no long distance or digital roaming charges) for calls made from the VoiceStream home digital service area in the states listed above. 600 anytime minutes plus 2000 nationwide weekend minutes for $39.99/month special offer good only on new activations through December 31, 2000. One-year service agreement required. Weekends defined as midnight Friday through midnight Sunday. Receive 2000 nationwide weekend minutes each month for the first 12 months of service. Nationwide weekend minutes may be used to call any number in the U.S. from your VoiceStream home digital service area with no long distance charge. Incoming and outgoing calls are rounded up and billed in full minute increments from the time the network begins to process the call (before the call rings or is answered) through its termination of the call. All allocated minutes must be used in the month provided and do not carry over. We guarantee that no other carrier gives you more unrestricted local minutes and included features for $39.99 a month. Guarantee is based on competitors' published non-promotional consumer rates for unrestricted local airtime. Applicable taxes, ... analog mode (analog) long-distance and roaming charges are additional. Our digital PCS system is not compatible with analog TTY which may delay or prevent emergency calls. Additional restrictions may apply. Call 1-800-937-8997 or see a VoiceStream representative for more details. When sharing minutes, all lines must be activated in the same VoiceStream market and must have the same billing address. The number of additional lines of service is limited to four. Minutes are shared between all phones on the account on a first come, first served basis. VoiceStream is a registered trademark of VoiceStream Wireless Corporation.

OK

Communications works best when using two phones.

2 Internet-ready phones starting at $49.99!

Limited time offer.

2 Internet-ready i500plus phones for **$49.99**

2 Internet-ready i1000plus phones for **$169.99**

Sign up by March 31, 2001, and choose from one option for both phones.

FREE Nextel Online℠

or

FREE nights and weekends

or

FREE long distance

Monthly Rate for TWO Phones	Number of Shared Cellular Minutes	Number of Shared Direct Connect Minutes
$69.99	400	300
$89.99	600	300

RITZ CAMERA & 1 HOUR BIG PRINT

Nextel's 4-in-1 solution gives you more ways than anyone to communicate with everyone.℠

- Nextel Direct Connect®
  (digital, two-way radio feature provides instant contact and instant answers with the push of a button)
- Wireless Web Services
  (including Nextel Online℠ and Two-Way Messaging)
- Digital Cellular
- Text and Numeric Messaging

There's never been an offer like it, so get to Ritz Camera today.

For the location nearest you, call 800 • 52 • FOCUS

Available at participating locations only. In-store activation may be required in select retail locations. This offer is for new activations prior to March 31, 2001. One-year promotional agreement and credit approval required. $200 early termination fee applies. Equipment offers cannot be combined with any other offer. Phones must choose the same free option. Free option valid as long as you are on a shared-minute rate plan. Additional phones may not be added to these plans. Nights and weekends are from 8:00 pm through 7:00 am Monday through Thursday and 8:00 pm Friday through 7:00 am Monday. Nextel Online and Web browsing may not be combined. Other restrictions may apply.

CompUSA® Is Your Wireless Connection

NEXTEL
AUTHORIZED RETAILER

MOTOROLA

i1000 Plus Twin Pack
- Speakerphone
- VibraCall® Silent Alert Ringer
- Missed Call Indicator
- Turbo Dial™ One-Touch Dialing
- Nextel Online™ Wireless Internet Services

#280739

Also Available Individually:
i1000 Plus Single 99.99 #280730

TWIN PACK 169.99

Get Unlimited Digital Cellular Calls for $99.99/mo.

for 1 year when you sign up for the Nextel unlimited plan*
- Unlimited Nextel Direct Connect®
- Unlimited Nextel Online Basic
- FREE Voice Mail
- FREE Caller ID
- Hurry in, offer expires March 31, 2001**

4 Ways to Communicate in 1 Sleek Handset

1. Digital Cellular Phone
2. Nextel Online℠ Wireless Internet Services
3. Text/Numeric Messaging

And Best of All:

4. Nextel Direct Connect® Digital 2-way Radio Feature

A revolutionary way to communicate digitally. The Nextel Direct Connect® Digital 2-way Radio feature allows you to communicate instantly with people instead of leaving messages on machines or voice mail. Simply push a button to speak and release it to listen. It's that simple.

Includes A Cigarette Lighter Adapter

Includes A Travel Charger

Includes Two Carry Holsters with Belt Clips

Includes An Instructional Video

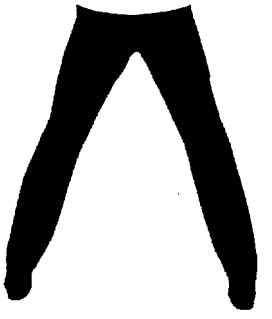
Activating Your Nextel Phone Is Easy***

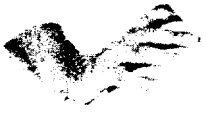
1. **Buy** Your Phone at CompUSA® & Simply Take It Home.
2. **Gather** Important Information such as Your Driver's License Number, Billing Address and Nextel Phone Model.
3. **Read** the Terms and Conditions of Your Service Agreement.
4. **Dial** NEXTEL Toll-Free to Activate Your Phone.

*Plan is for a new [illegible] $99.99 Unlimited Plan is not a shared plan, applies to each handset. **Requires two year promotional agreement and credit approval. Available in select locations. See store for details and coverage. Limited-time offer. The Nextel $99.99 Unlimited Plan requires a [illegible] agreement and credit check. Unlimited Plan extends for 1 year, and does not include long distance charges. Long distance charges are $.15/minute. $200 early termination fee applies. Unlimited Nextel Direct Connect minutes refers to Nextel Direct Connect Calls only. Nextel Online, More than [illegible] anyone to communicate with everyone on the appropriate range of Nextel Direct Connect in your calling area. ©2001 Nextel Communications, Inc. All rights reserved. Nextel, the Nextel logo, Nextel Direct Connect, Nextel Online, More than [illegible] and service marks of Nextel Communications, Inc. MOTOROLA, The Stylized M Logo and all other trademarks indicated as such herein are trademarks of Motorola, Inc. Reg. U.S. Pat. & Tm. Off. All other product names and services are the property of their respective owners.

SHARE AND SHARE ALIKE.

YEAH, WHAT SHE SAID.

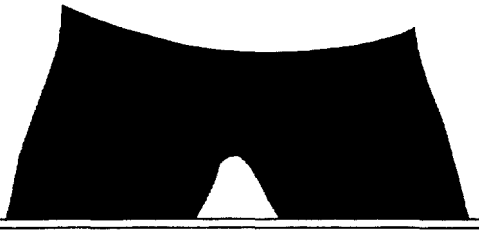




New FamilyTime Plan with 3000 shared minutes

1000 *Anytime Minutes* **1000** *FamilyTime Minutes* **1000** *Weekend Minutes*

2 lines for just $35 each

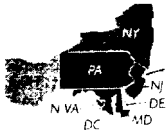


VoiceStream WIRELESS

Get more from life.

Call 1-888-STREAMS (787-3267) for details. voicestream.com

Mid-Atlantic Neighborhood



INCLUDES LONG DISTANCE AND DIGITAL ROAMING WITHIN DC, MD, DE, NJ, PA, OH, NY & N VA (area code 703)*

VOICESTREAM STORES

1850 K Street NW (DC)	202-223-3850
Ballston Commons Mall	703-276-1501
Fair Oaks Mall	571-432-0394
Springfield Mall	703-921-2045
Lakeforest Mall	301-987-2257
The Gallery Mall at Inner Harbor	410-539-0107
Owings Mills, Reistertown Rd. (St. Thomas Shopping Center)	410-581-2300
White Marsh Mall	410-931-6980
The Mall in Columbia	410-730-0030
Annapolis-Jennifer Square	410-224-6755

NEW STORES

Montgomery Mall	301-365-4448
Towson Circle (located behind Barnes and Noble)	410-583-8833

GRAND OPENING

Arundel Mills Mall–Neighborhood 1	410-799-3444

GRAND RE-OPENING

Rockville Pike	301-838-3453

Motorola Your most important call

Business customers call 866-VSTR-B2B for details.

AUTHORIZED DEALERS

METRO DC AREA	
Always Mobile	202-526-7900
Central Paging	202-635-7754
Export Electronics	202-232-3743
Future Comm	202-546-8818
Future Comm	202-289-9060
Graffiti Audio Video	202-244-9643
Graffiti Audio Video	202-296-8412
Wireless Paging & Cellular	202-628-2337
Wireless World DC	202-775-8880
NORTHERN VIRGINIA	
Cross Wireless	703-293-6202
Cross Wireless	703-823-1188
Cross Wireless	703-318-1600
Mobile Solutions	703-916-8366
Mobile Solutions	703-916-1834
Nasonal Comm	703-721-0200
Nasonal Comm	703-641-9600
Nasonal Comm	703-412-4373
Nasonal Comm	703-465-2274
Wireless Market	703-442-8185
ABC Net	703-256-2489
Digi-Tel	703-352-0203
Future Comm	703-642-8890
Mailbox Center	703-560-1938
Quintex Comm	703-709-7300
Quintex Comm	703-930-9706
TDQ Comm	703-536-4200
Teletalk	703-814-4600
Travcom II	703-827-2222
VMC Comm	703-532-9100
Wireless 2000	703-379-8484
BALTIMORE AREA	
DigCom	410-590-6660
First Class Paging	410-686-5700
Inner City Records	410-625-1290
Metropolitan Wireless	410-444-3101
Nasonal Comm	410-347-3111
Nasonal Comm	410-590-3001
Teletalk	410-525-2800
Teltronic	410-646-2600
ANNAPOLIS	
Mobile Solutions	410-571-9088
DigCom	410-263-6063
LAUREL/COLUMBIA AREA	
DigCom	301-953-7036
DigCom	301-596-8888
MONTGOMERY COUNTY	
Cross Wireless	301-881-4444
Cross Wireless	301-907-9300
Mobile Solutions	301-767-3116
Alternative Comm	301-916-6300
Digi-Tel	301-424-2200
East West Comm	301-654-4300
Graffiti Audio Video	301-907-3660
ITC	301-838-9088
Let's Connect	301-424-3005
Talk Unlimited	301-738-5678
TDEC	301-869-7818
Teletalk	301-309-9360
Teletronic	301-468-6500
Wire USA	301-652-4802
Wireless International	301-840-2227
Wireless Paging & Cellular	301-565-0015
PRINCE GEORGES COUNTY	
Airwaves Comm	301-870-0361
Airwaves Comm	301-749-5400
DigCom	301-516-8800
DigCom	301-773-1617
Grant Comm	301-423-1228
Grant Comm	301-675-0596
Mobile Solutions	301-474-4977
Cellular Phone Shop	301-386-4545
PC Paging	301-931-3690
PC Paging	301-856-0693
PC Paging	301-870-4160
Player's World Paging	301-773-8615
Teletalk	301-918-9330
Wire USA	301-559-7600
Wireless 2000	301-322-4600
Wireless 2000	301-843-0089

amazon.com.

BEST BUY

Office DEPOT

GSM GLOBAL NETWORK

*Coverage not available in all areas. Map is not a representation of coverage. Anytime minutes quoted above are local airtime (pay no long distance or digital roaming charges) for calls made from the VoiceStream (VS) home digital service area in the states listed above. 1000 anytime, 1000 FamilyTime, and 1000 local weekend minutes special offer good until 3/25/01. Two-for-one phone offer refers to a mail-in rebate on purchase of qualifying phone and activation of VS service on qualifying rate plan. Qualifying phones: Ericsson 768 ($49.99 suggested retail price; $25 rebate), Nokia 6190 ($99.99 suggested retail price; $50 rebate), and Motorola 3682 ($49.99 suggested retail price; $25 rebate). FamilyTime plan requires two lines of service. All lines of service must be activated in the same VS market and must have the same billing address. Additional lines of service on a FamilyTime plan are $10/month. Five lines max. Minutes shared between all phones on a first come, first served basis. One-year service agreement required. Receive 1000 local weekend minutes/month for the first 12 months of service. Weekends are defined as midnight Fri. through midnight Sun. FamilyTime minutes may be used to talk with any VS customer in your home calling area. Incoming and outgoing calls are rounded up and billed in full minute increments from the time the network begins to process the call (before the call rings or is answered) through its termination of the call. All [illegible] Applicable taxes, assessments, tolls, and dual-mode (analog/ long-distance and roaming charges) are additional. Our digital PCS system is not compatible with analog TTY which may delay or prevent emergency

headed wrong way.

way behind schedule.

will be working late again.

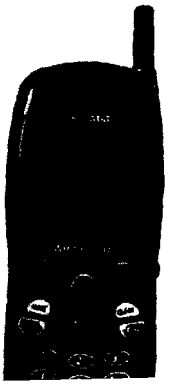
scheduling new pickups

through dispatcher with

at&t digital pocketnet℠ service.

way ahead of schedule.

will get home early.



AT&T DIGITAL POCKETNET SERVICE FOR BUSINESS

Get time-critical information when you need it with AT&T Digital PocketNet service for business. You and your drivers can exchange real-time wireless information about pickups and deliveries, as well as confirmations captured electronically with up to ten lines of screen text. Plus, you can get voice features like caller ID and a message waiting indicator. Combine AT&T